

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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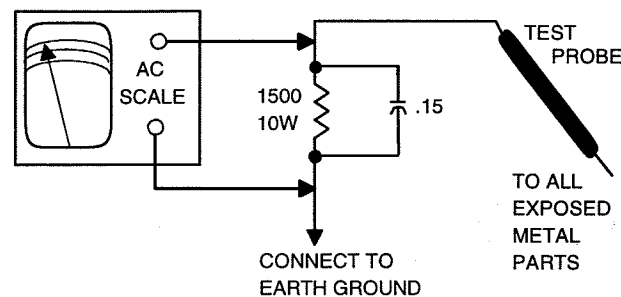
SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC, turn the receiver on, and set all customer controls for normal operation. Measure the voltage at TP7. Voltage should measure between 15.6V and 19.2V. If voltage exceeds this range the circuit must be repaired. Momentarily connect a jumper between TP7 and the cathode of D421. The receiver should lose raster and sound. If receiver does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove AC power for 30 seconds and then restore AC power.



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PHOTOFACT® Technical Service Data

SET 4002

MODEL DS13630 (CHASSIS 13630-02, 13630-03)

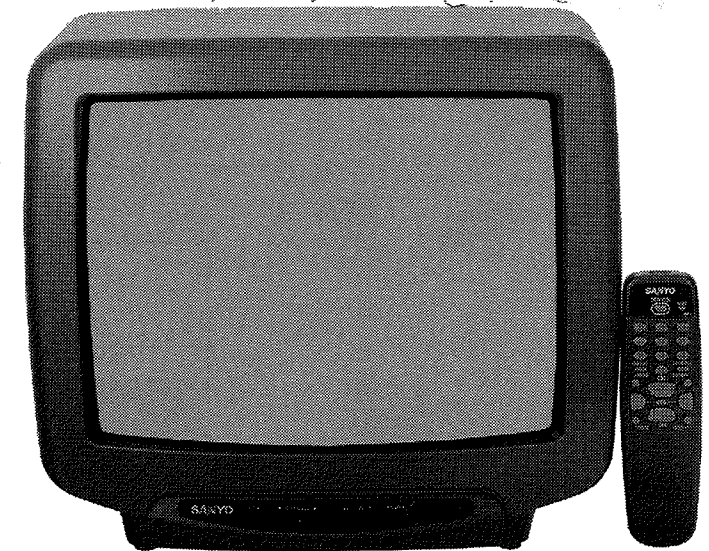
SANYO

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SANYO

Model DS13630 (Chassis 13630-02, 13630-03)



Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list



HOWARD W. SAMS & COMPANY

JULY 1998 SET 4002

For Supplier Address,
See PHOTOFACT Annual Index

PARTS LIST

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Custom Components Corporation (Chek-A-Color)
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- Sencore, Inc.
- Terrell & Nobis (TNI Electronics)
- Thomson Consumer Electronics, Inc. (SK, TCE)

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
# A101 (1)	Tuner	645 023 5979	UHF/VHF, ENV56D15G3
# A101B	Block	645 018 9685	Antenna
A1901	Receiver	645 021 1041	Remote
# F601	Fuse	423 007 1601	4Amp, 125V, Fast Acting
	Fuse	423 007 1809	4Amp, 125V, Fast Acting
	Fuse	423 018 8101	4Amp, 125V, Fast Acting
F601A, B	Fuse Holder	645 000 5077	For F601 (2 Used)
	Fuse Holder	645 016 0479	For F601 (2 Used)
# K701	Socket	610 010 4310	CRT
	Socket	645 017 2595	CRT
# RL601	Relay	645 000 4155	Power
	Relay	645 011 2713	Power
	Relay	645 015 8629	Power
	Relay	645 024 7767	Power
	Relay	645 024 7828	Power
SP901	Speaker	610 055 6614	3" X 3", 8 Ohms, 2W
SW701	Switch	610 011 4227	Normal/Service
SW1901	Switch	645 010 7658	Power
SW1902	Switch	645 010 7658	Volume Up
SW1903	Switch	645 010 7658	Volume Down
SW1904	Switch	645 010 7658	Channel Up
SW1905	Switch	645 010 7658	Channel Down
SW1906	Switch	645 010 7658	Menu
# V1 (1)	CRT	414 007 4808	A34KPU02XX
# V1 (1)	CRT	413 006 4703	A34JRY24X
# V1 (2)	CRT	414 008 9307	A34EEC34X106
# W601	Line Cord	610 222 9660	AC, Polarized
	Line Cord	645 023 1674	AC, Polarized
X141	Filter	421 006 8904	SAW
X153	Filter	610 015 2946	4.5MHz
X161	Trap	610 015 3059	4.5MHz
X251	Crystal	610 012 0655	3.58MHz
	Crystal	610 204 4195	3.58MHz
	Crystal	610 245 9746	3.58MHz
X401	Oscillator	610 012 2970	503.5kHz
	Oscillator	645 003 4107	503kHz
X801	Oscillator	645 021 9917	503kHz
	Antenna	610 216 4886	Rod
	Antenna	610 216 4916	Rod
	Converter	645 003 3742	Antenna
	Converter	645 007 9061	Antenna
	Magnet (2)	610 217 7787	Purity/Convergence
	PC Board	610 264 7235	CRT
	PC Board (2)	610 264 7198	Main
	PC Board (3)	610 266 3167	Main
	PC Board	610 259 0012	Remote Transmitter
	PC Board	610 259 0029	Remote Transmitter
	Transmitter	645 018 3621	Remote
	Transmitter	645 024 6272	Remote
	Wedge (2)	610 117 0154	Yoke Positioning (3 Used)
	Wedge (2)	610 117 7924	Yoke Positioning (3 Used)

- # For SAFETY use only equivalent replacement part.
 (1) Contact TNI Electronics for replacement; order by part number on tuner.
 (2) Used in chassis 13630-02.
 (3) Used in chassis 13630-03.

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D101	RD36EB1	407 056 2307	NTE5037A	ECG5037A	SK36A
	UZ-36BCA	407 163 9503	-	-	-
D102	RD5.1EB2	407 056 8002	NTE5010A	ECG5010A	SK5A1
	RD5.1EB3	407 056 8200	NTE5010A	ECG5010A	SK5A1
	UZ-5.1BCB	407 151 8402	-	-	-
	UZ-5.1BCC	407 163 8209	-	-	-
D351	1N4148	408 008 2406	NTE519	ECG519	SK3100
	1S1553	407 013 1008	NTE177	ECG177	SK9091
	1S2076A	407 013 4306	NTE519	ECG519	SK3100
	1S2471	407 013 6508	NTE519	ECG519	SK3100
D361	DS442X	407 005 4505	NTE519	ECG519	SK3100
	GMA01	407 007 9904	NTE519	ECG519	SK3100
	1SS133	407 012 4406	NTE519	ECG519	SK3100
	1SS176	407 012 5809	NTE177	ECG177	SK9091
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	408 008 2406	NTE519	ECG519	SK3100
D409 (1)	ES1	407 007 6606	NTE552	ECG552	SK9000
	RMPG06G	407 124 5506	NTE552	ECG552	SK9000
	ERA18-04	407 124 6404	NTE552	ECG552	SK9000
# D421, 22	HZ11B2L	407 158 1307	NTE5020A	ECG5020A	SK11A
D428	RD13EB3	407 054 4808	NTE5022A	ECG5022A	SK13A
	UZ-13BCC	407 163 8001	-	-	-
D429	DS442X	407 005 4505	NTE519	ECG519	SK3100
	GMA01	407 007 9904	NTE519	ECG519	SK3100
	1SS133	407 012 4406	NTE519	ECG519	SK3100
	1SS176	407 012 5809	NTE177	ECG177	SK9091
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	408 008 2406	NTE519	ECG519	SK3100
D482	TVR1G	407 011 4407	NTE552	ECG552	SK9000
D483	ES1	407 007 6606	NTE552	ECG552	SK9000
	RMPG06G	407 124 5506	NTE552	ECG552	SK9000
	ERA18-04	407 124 6404	NTE552	ECG552	SK9000
D484, 86	EU2	407 007 7603	NTE552	ECG552	SK9000
D487	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
D501	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
# D602 Thru	EM2B	407 005 7605	NTE125	ECG125	SK3081
# D605	1S1887A	407 013 3200	NTE552	ECG552	SK9000
	GP15G	407 008 8606	NTE125	ECG125	SK3081
D621	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
D622	DS442X	407 005 4505	NTE519	ECG519	SK3100
	GMA01	407 007 9904	NTE519	ECG519	SK3100
	1SS133	407 012 4406	NTE519	ECG519	SK3100
	1SS176	407 012 5809	NTE177	ECG177	SK9091
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	408 008 2406	NTE519	ECG519	SK3100

- # For SAFETY use only equivalent replacement part.
 (2) Used in chassis 13630-02.

PARTS LIST continued

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.	
D623	RD5.1EB2	407 056 8002	NTE5010A	ECG5010A	SK5A1	
	RD5.1EB3	407 056 8200	NTE5010A	ECG5010A	SK5A1	
	UZ-5.1BCB	407 151 8402	-	-	-	
	UZ-5.1BCC	407 163 8209	-	-	-	
D801, 02	DS442X	407 005 4505	NTE519	ECG519	SK3100	
	GMA01	407 007 9904	NTE519	ECG519	SK3100	
	ISS133	407 012 4406	NTE519	ECG519	SK3100	
	ISS176	407 012 5809	NTE177	ECG177	SK9091	
	IS1555	407 013 1206	NTE177	ECG177	SK9091	
	IS2076	407 013 4207	NTE177	ECG177	SK9091	
	IS2473	407 013 7109	NTE177	ECG177	SK9091	
	IN4148	408 008 2406	NTE519	ECG519	SK3100	
	D831	RD4.3EB2	407 056 4707	NTE5008A	ECG5008A	SK4A3
		UZ-4.3BCB	407 164 9601	-	-	-
	D834	RD10EB3	407 054 0107	NTE5019A	ECG5019A	SK10A
		RD11EB3	407 054 1807	NTE5020A	ECG5020A	SK11A
	D836	UZ-11BCA	407 164 4606	-	-	-
		UZ-10BCC	407 164 6501	-	-	-
DS442X		407 005 4505	NTE519	ECG519	SK3100	
GMA01		407 007 9904	NTE519	ECG519	SK3100	
D841, 43	ISS133	407 012 4406	NTE519	ECG519	SK3100	
	ISS176	407 012 5809	NTE177	ECG177	SK9091	
	IS1555	407 013 1206	NTE177	ECG177	SK9091	
	IS2076	407 013 4207	NTE177	ECG177	SK9091	
	IS2473	407 013 7109	NTE177	ECG177	SK9091	
	IN4148	408 008 2406	NTE519	ECG519	SK3100	
	D861	DS442X	407 005 4505	NTE519	ECG519	SK3100
		GMA01	407 007 9904	NTE519	ECG519	SK3100
		ISS133	407 012 4406	NTE519	ECG519	SK3100
		ISS176	407 012 5809	NTE177	ECG177	SK9091
		IS1555	407 013 1206	NTE177	ECG177	SK9091
		IS2076	407 013 4207	NTE177	ECG177	SK9091
		IS2473	407 013 7109	NTE177	ECG177	SK9091
		IN4148	408 008 2406	NTE519	ECG519	SK3100
# IC001		TDA7231A	409 343 0409	-	-	-
		LA7673	409 274 3302	-	-	-
# IC481		UPC78M09AHF	409 366 7904	-	-	-
		BA178M09T	409 367 2809	NTE1966	NTE1966	-
		MC78M09CT	409 370 0007	-	-	-
# IC501		LA7837	409 173 2703	NTE7104	ECG7104	-
# IC601	STR30135	409 047 8602	NTE1778	ECG1778	SK9871	
IC801	LC864616A-5E43	410 287 6808	-	-	-	
	ST24C01B6	409 296 4004	-	-	-	
	24LC01B/P	409 321 0902	-	-	-	
	XLS24C01AP	409 321 7307	-	-	-	
	AT24C01A-10PC-2.5	410 243 3803	-	-	-	
	Q161	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
2SA1015-Y(SAN)		405 001 7605	NTE290A	ECG290A	SK9132	
2SA564A-Q(CU)		405 004 3109	NTE290A	ECG290A	SK3932	
2SA564A-R(CU)		405 004 3208	NTE290A	ECG290A	SK3932	
2SA608-E-CTV-NP		405 004 4205	NTE290A	ECG290A	SK3114A	
2SA608-F-CTV-NP		405 004 4809	NTE290A	ECG290A	SK3114A	
2SA933S-Q		405 006 1707	NTE290A	ECG290A	SK9132	
2SA933S-R		405 006 1806	NTE290A	ECG290A	SK9132	

For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.	
Q203	2SC1740S-Q	405 011 8401	NTE85	ECG85	SK3122	
	2SC1740S-R	405 011 8500	NTE85	ECG85	SK3122	
	2SC1740S-S	405 011 8609	NTE85	ECG85	SK3122	
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A	
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A	
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A	
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245	
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245	
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245	
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A	
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A	
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A	
	Q281	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
		2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
2SA564A-Q(CU)		405 004 3109	NTE290A	ECG290A	SK3932	
2SA564A-R(CU)		405 004 3208	NTE290A	ECG290A	SK3932	
2SA608-E-CTV-NP		405 004 4205	NTE290A	ECG290A	SK3114A	
2SA608-F-CTV-NP		405 004 4809	NTE290A	ECG290A	SK3114A	
2SA933S-Q		405 006 1707	NTE290A	ECG290A	SK9132	
2SA933S-R		405 006 1806	NTE290A	ECG290A	SK9132	
Q371, 72		2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
		2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
		2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
		2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
		2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
		2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA933S-Q	405 006 1707	NTE290A	ECG290A	SK9132	
	2SA933S-R	405 006 1806	NTE290A	ECG290A	SK9132	
	Q401	2SC2271-D-CTV	405 013 6207	NTE399	ECG399	SK9352
		2SD1649-CTV-YB	405 022 6601	NTE2302	ECG2302	SK9422
	# Q402 Q621, 22	2SC1740S-Q	405 011 8401	NTE85	ECG85	SK3122
		2SC1740S-R	405 011 8500	NTE85	ECG85	SK3122
		2SC1740S-S	405 011 8609	NTE85	ECG85	SK3122
		2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
2SC1815-O		405 012 2101	NTE85	ECG85	SK3124A	
2SC1815-Y		405 012 2309	NTE85	ECG85	SK3124A	
2SC536-E-NP		405 019 1909	NTE85	ECG85	SK3245	
2SC536-F-NP		405 019 2708	NTE85	ECG85	SK3245	
2SC536-G-NP		405 019 3804	NTE85	ECG85	SK3245	
2SC945A-PA		405 020 7501	NTE85	ECG85	SK3124A	
2SC945A-QA		405 020 7709	NTE85	ECG85	SK3124A	
2SC945A-RA		405 020 7907	NTE85	ECG85	SK3124A	
Q623		2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
		2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932	
	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932	
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A	
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A	
	2SA933S-Q	405 006 1707	NTE290A	ECG290A	SK9132	
	2SA933S-R	405 006 1806	NTE290A	ECG290A	SK9132	
	Q701, 03, 05	2SC1473Q	-	NTE399	ECG399	SK9352
		2SC1473NC-P	405 010 6507	NTE399	ECG399	SK9352
		2SC1473NC-Q	405 010 6606	NTE399	ECG399	SK9352
		2SC1473NC-R	405 010 6705	NTE399	ECG399	SK9352

For SAFETY use only equivalent replacement part.

PARTS LIST continued

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.	
Q813	2SC1740S-Q	405 011 8401	NTE85	ECG85	SK3122	
	2SC1740S-R	405 011 8500	NTE85	ECG85	SK3122	
	2SC1740S-S	405 011 8609	NTE85	ECG85	SK3122	
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A	
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A	
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A	
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245	
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245	
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245	
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A	
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A	
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A	
	Q831	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
		2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
2SA564A-Q(CU)		405 004 3109	NTE290A	ECG290A	SK3932	
2SA564A-R(CU)		405 004 3208	NTE290A	ECG290A	SK3932	
2SA608-E-CTV-NP		405 004 4205	NTE290A	ECG290A	SK3114A	
2SA608-F-CTV-NP		405 004 4809	NTE290A	ECG290A	SK3114A	
2SA933S-Q		405 006 1707	NTE290A	ECG290A	SK9132	
2SA933S-R		405 006 1806	NTE290A	ECG290A	SK9132	
Q881, 82		2SC1740S-Q	405 011 8401	NTE85	ECG85	SK3122
		2SC1740S-R	405 011 8500	NTE85	ECG85	SK3122
	2SC1740S-S	405 011 8609	NTE85	ECG85	SK3122	
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A	
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A	
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A	
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245	
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245	
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245	
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A	
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A	
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A	

CAPACITORS & ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
C161	56pF 5% 50V N220	403 028 2009
# C411 (1)	.0042 3% 1.5kV	404 063 6403
# C411 (2)	.004 3% 1.5kV	404 074 7802
# C413	680pF 10% 3kV	403 232 3403
	680pF 10% 3kV	403 324 3007
# C417 (1)	.27 5% 200V	403 082 9006
# C417 (2)	.24 5% 200V	403 102 0006
C493	2.2µF 20% 100V NP	404 056 5307
# C601	.068 20% 275VAC	404 073 7506
	.068 20% 250VAC	404 072 7903
# C604, 05	.001 10% 500V	403 075 7101
# C708	.001 +100% -0% 2kV	403 175 3409
	.001 +80% -20% 2kV	403 077 2807

For SAFETY use only equivalent replacement part.

- (1) Used in chassis 13630-02.
(2) Used in chassis 13630-03.

CONTROLS & RESISTORS

Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# PS601	8 COLD PTC	408 000 3203	-
# R101	2.2 5% 1/4W Nonflammable	401 015 6603	QW2D2
# R401	6800 5% 2W	401 069 3702	2W268
# R402	3300 5% 1W	401 061 3502	1W233
# R407	8200 5% 2W	401 069 8202	2W282
# R409 (1)	560 5% 1W	401 062 6106	1W156
# R411	5.6 5% 2W	401 068 6209	2W5D6
# R421	3900 1% 1/16W	401 053 2704	-
# R422	10K 1% 1/6W	401 052 6802	-
# R423	3300 1% 1/6W	401 053 2605	-
# R482	1 5% 1/4W Nonflammable	401 011 9004	QW1D0
# R483	1 5% 1/2W Nonflammable	401 006 7701	HW1D0
# R484	2.2 5% 1W	401 059 9608	1W2D2
# R486	27 5% 2W	401 066 9103	2W027
# R488	2.2 5% 1/2W Nonflammable	401 008 3800	HW2D2
# R489	18 5% 1W	401 059 5907	1W018
# R497	6.8 5% 2W	401 069 0404	2W6D8
# R601	1 10% 5W Wirewound	402 072 2706	-
	1 10% 6W Wirewound	402 055 3201	-
	1 10% 6W Wirewound	402 055 3300	-
# R606	47 5% 1/2W Nonflammable	401 010 2600	HW047
# R607	5.6 5% 2W	401 068 6209	2W5D6
# R608	180 5% 10W Wirewound	402 076 2207	10W118
	180 10% 10W Wirewound	402 071 6408	10W118
# R621	820 5% 6W Wirewound	402 078 6203	-
# R622	270 5% 2W	401 067 0000	2W127
# R624	330 5% 1W	401 061 2505	1W133
# R711, 12, 13	15K 5% 1W	401 059 4900	1W315
R860	6800 1% 1/6W	401 053 4708	-
R863	15K 1% 1/6W	401 052 9308	-
VA601	Varistor	-	-
VR141	10K RF AGC	645 006 5422	-
	10K RF AGC	645 011 6988	-
	10K RF AGC	645 019 6003	-
VR501	50K Vertical Size	610 232 8479	-
	50K Vertical Size	645 006 5613	-
	50K Vertical Size	645 022 9602	-
VR701	5000 Red Bias	645 020 2629	-
VR702	5000 Green Bias	645 020 2629	-
VR703	5000 Blue Bias	645 020 2629	-
VR704	200 Red Drive	645 020 2612	-
VR705	200 Blue Drive	645 020 2612	-

For SAFETY use only equivalent replacement part.

- (1) Not used in chassis 13630-03.

CABINET PARTS

Item	Mfr. Part No.
Button United	610 257 4081
Cabinet Back	610 257 4135
Cabinet Front	610 258 7821
Remote Transmitter	
Battery Cover	610 254 0550
Battery Cover	610 254 0581

COILS & TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.
L164	22µH	645 003 9782
	22µH	645 016 2831
L166	33µH	645 003 9812
	33µH	645 016 2985
L201	10µH	645 001 4567
	10µH	645 016 2534
L203	56µH	610 029 7784
	56µH	645 008 0234
L402, 03	Ferrite Bead	610 031 9998
L801	5.6µH	645 008 2894
	5.6µH	645 016 3104
L803	5.6µH	645 008 2894
	5.6µH	645 016 3104
# L901	Degaussing	645 022 8551
	Degaussing	645 022 8568
# L902 (1)	Yoke Horiz 4.5mH	610 003 5270
	Vert 29.4mH	
# L902 (1)	Yoke	645 003 5287
# L902 (2)	Yoke	Part of CRT
# LF601	Line Filter	610 031 5938
	Line Filter	610 031 6034
	Line Filter	610 031 6041
	Line Filter	610 031 6065
	Line Filter	610 031 6072
T131	FM Detector	610 037 7615
T151	VCO	645 000 5206
T161	AFT	610 037 6564
T401	Horizontal Driver	610 000 9424
# T402 (3)	Horizontal Output	645 018 9586

For SAFETY use only equivalent replacement part.

- (1) Used in chassis 13630-02.
(2) Used in chassis 13630-03.
(3) Focus and screen controls are part of T402.



Created with pride by the employees
of Howard W. Sams & Company.

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SANVO

MODEL DS13630 (CHASSIS 13630-02, 13630-03)

A

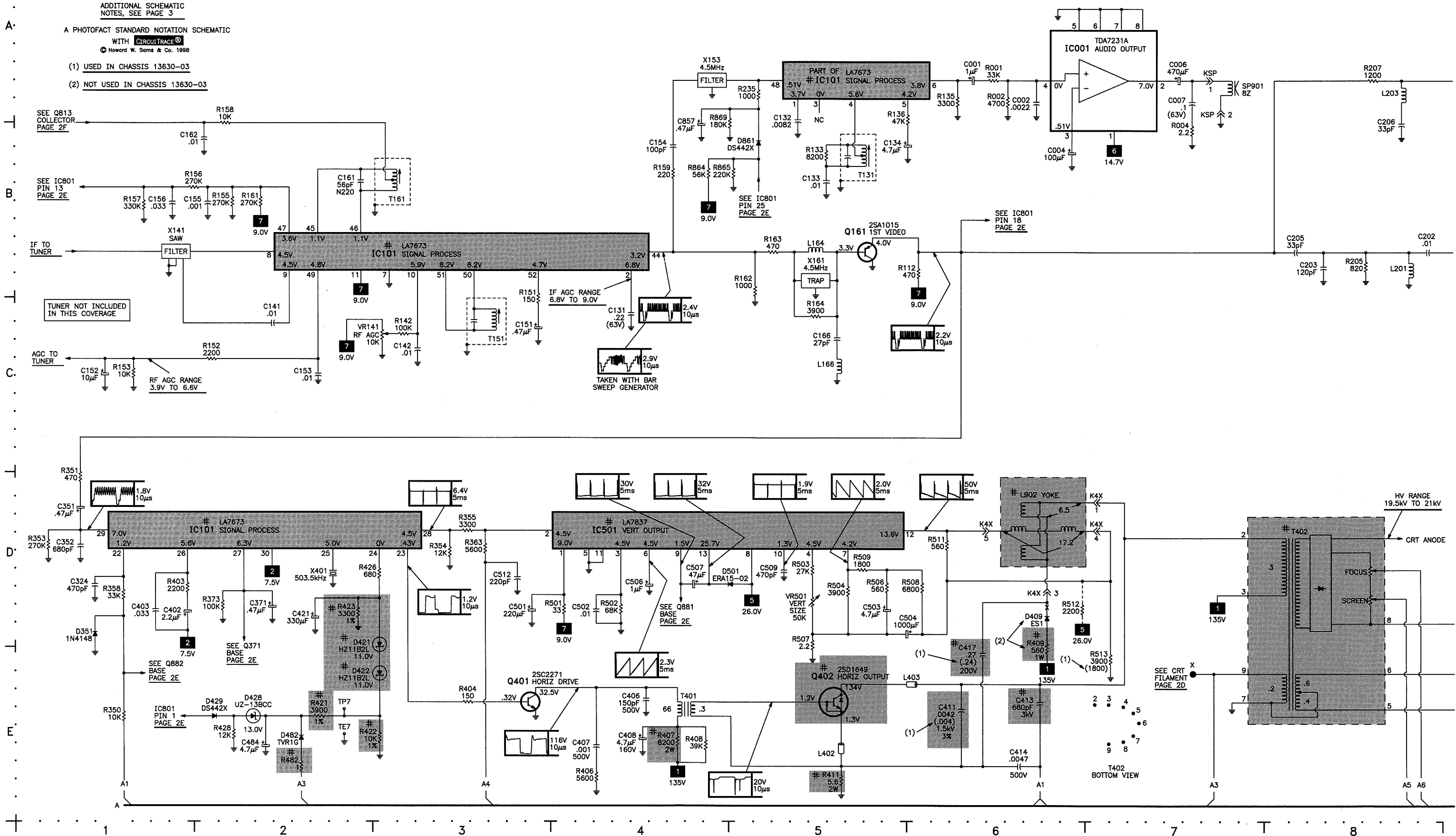
TELEVISION SCHEMATIC

B

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3

A PHOTOFACIT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE

- (1) USED IN CHASSIS 13630-03
(2) NOT USED IN CHASSIS 13630-03



A
B
C
D
E

SEE Q813 COLLECTOR PAGE 2F
SEE IC801 PIN 13 PAGE 2E
TUNER NOT INCLUDED IN THIS COVERAGE
AGC TO TUNER
RF AGC RANGE 3.9V TO 6.6V

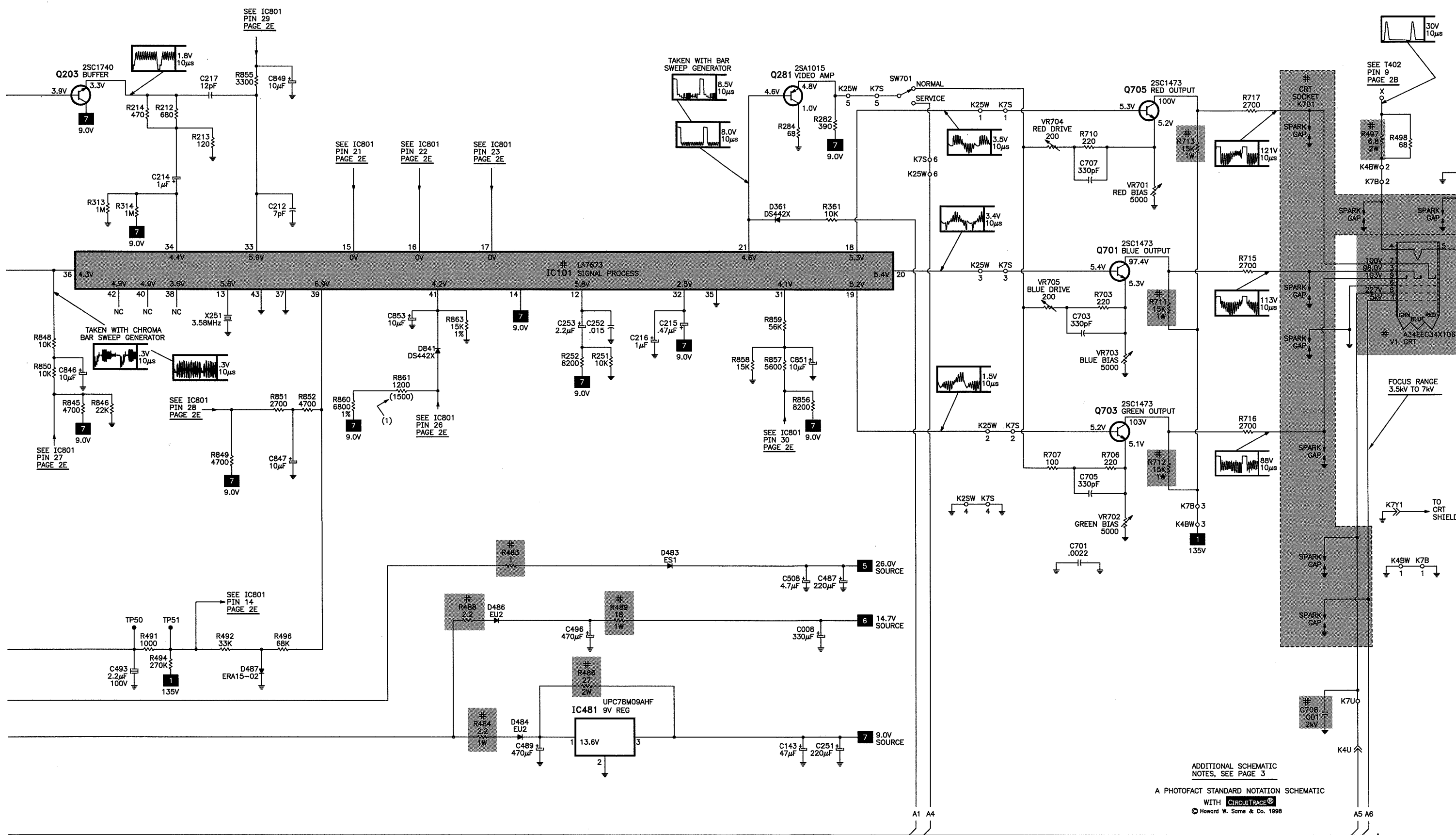
IF AGC RANGE 6.8V TO 9.0V
TAKEN WITH BAR SWEEP GENERATOR

HV RANGE 19.5KV TO 21KV
CRT ANODE
FOCUS
SCREENS
T402 BOTTOM VIEW

TELEVISION SCHEMATIC continued

C

D

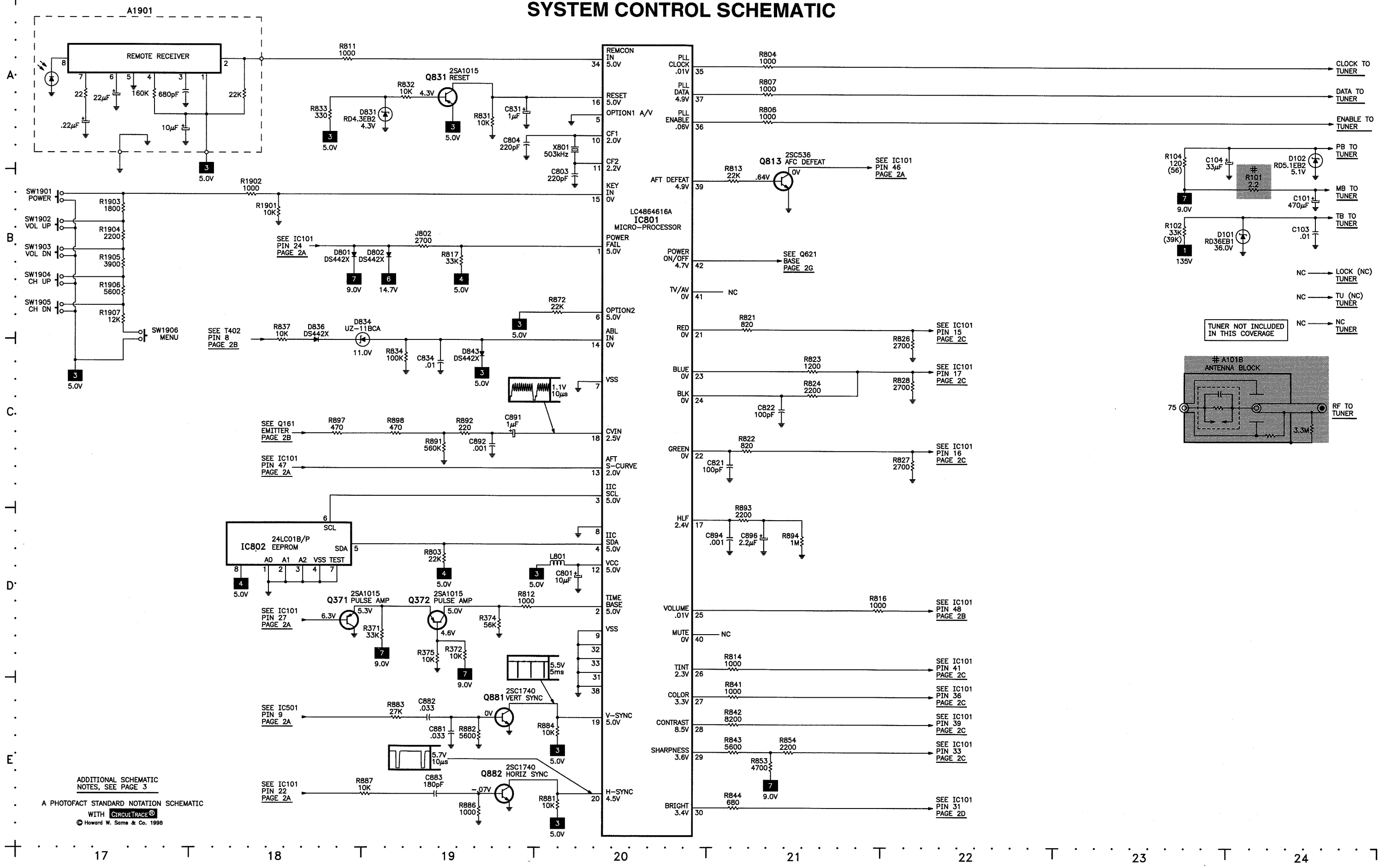


ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3
 A PHOTOFACIT STANDARD NOTATION SCHEMATIC
 WITH CIRCUITTRACE®
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E

SYSTEM CONTROL SCHEMATIC

F

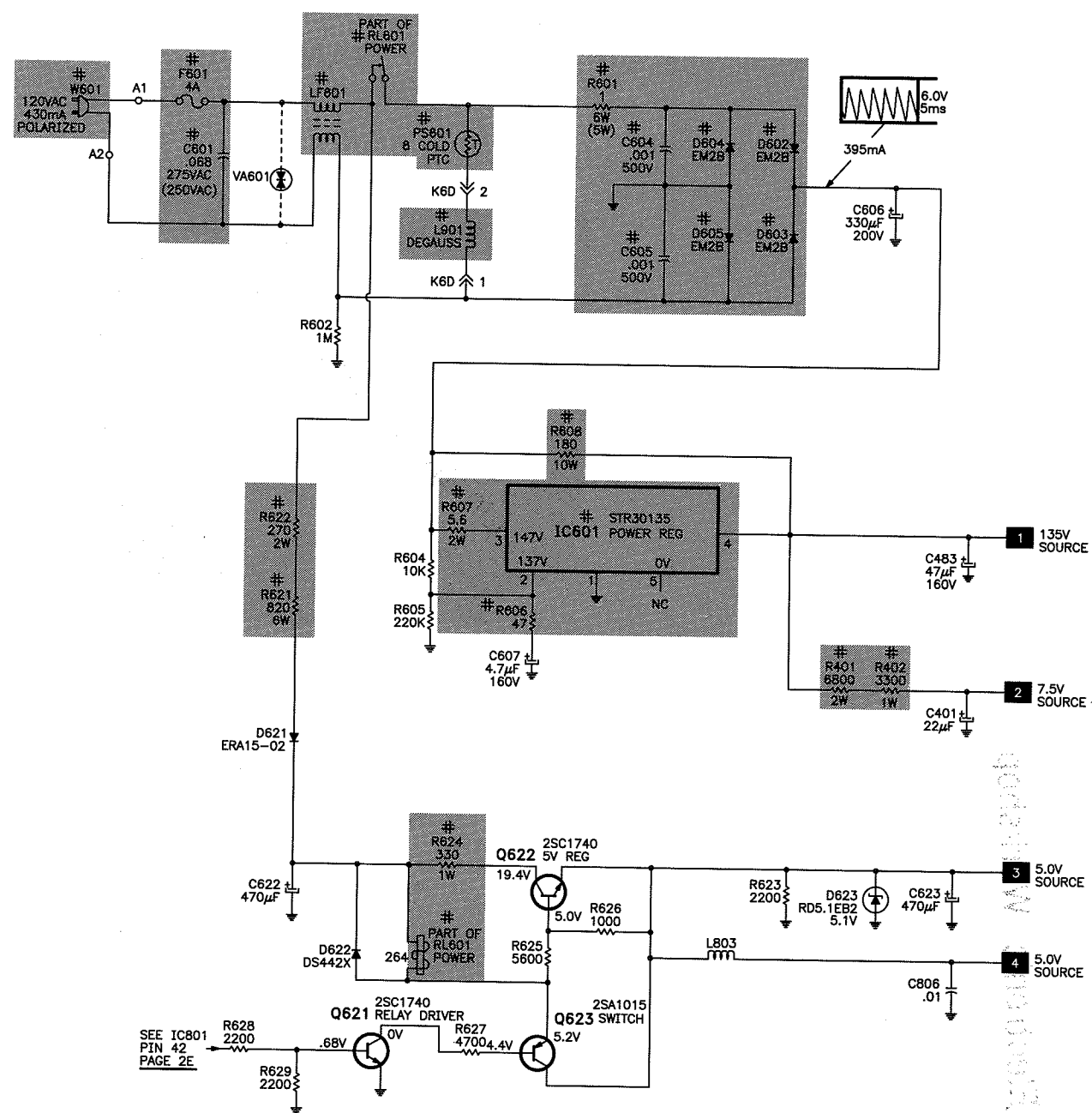


ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3

A PHOTOFACIT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE® © Howard W. Sams & Co. 1998

17 T 18 T 19 T 20 T 21 T 22 T 23 T 24 T

G POWER SUPPLY SCHEMATIC



SCHEMATIC COMPONENT LOCATION GUIDE

A1901	A-17	C509	D-5	IC001	A-6	R213	B-10	R621	C-26	R881	E-20
C001	A-6	C512	D-3	IC101	A-5	R214	A-9	R622	C-26	R882	E-19
C002	A-6	C601	A-25	IC101	B-12	R235	A-5	R623	D-27	R883	E-19
C004	B-6	C604	A-27	IC101	B-3	R251	C-12	R624	D-26	R884	E-20
C006	A-7	C605	B-27	IC101	D-2	R252	C-12	R625	D-26	R886	E-19
C007	A-7	C606	B-27	IC481	E-12	R282	B-13	R626	D-27	R887	E-18
C008	D-13	C607	C-26	IC501	D-4	R284	B-13	R627	D-26	R891	C-19
C101	B-24	C622	D-26	IC601	C-27	R313	B-9	R628	D-25	R892	C-19
C103	B-24	C623	D-28	IC801	B-20	R314	B-9	R629	D-26	R893	D-21
C104	B-23	C701	D-14	IC802	D-18	R350	E-1	R703	C-14	R894	D-21
C131	C-4	C703	C-14	J802	B-19	R351	D-1	R706	C-14	R897	C-18
C132	B-5	C705	D-14	L164	B-5	R353	D-1	R707	C-14	R898	C-19
C133	B-5	C707	B-14	L166	C-5	R354	D-3	R710	B-14	R1901	B-18
C134	B-5	C708	E-16	L201	B-8	R355	D-3	R711	C-15	R1902	B-18
C141	C-2	C801	D-20	L203	A-8	R358	D-1	R712	C-15	R1903	B-17
C142	C-3	C803	B-20	L402	E-5	R361	B-13	R713	B-15	R1904	B-17
C143	E-13	C804	A-19	L403	E-5	R363	D-3	R715	B-15	R1905	B-17
C151	C-3	C806	D-28	L801	D-20	R371	D-19	R716	C-15	R1906	B-17
C152	C-1	C821	C-21	L803	D-27	R372	D-19	R717	A-15	R1907	B-17
C153	C-2	C822	C-21	L901	B-26	R373	D-2	R803	D-19	RL601	A-26
C154	B-4	C831	A-19	L902	D-6	R374	D-19	R804	A-21	RL601	D-26
C155	B-2	C834	C-19	LF601	A-26	R375	D-19	R806	A-21	SP901	A-7
C156	B-1	C846	C-9	PS601	A-26	R401	C-27	R807	A-21	SW701	A-13
C161	B-2	C847	C-10	Q161	B-5	R402	C-27	R811	A-18	SW1901	B-17
C162	B-2	C849	A-10	Q203	A-9	R403	D-1	R812	D-19	SW1902	B-17
C166	C-5	C851	C-13	Q281	A-3	R404	E-3	R813	B-21	SW1903	B-17
C202	B-8	C853	C-11	Q371	D-18	R406	E-4	R814	E-21	SW1904	B-17
C203	B-8	C857	B-4	Q372	D-19	R407	E-4	R816	D-21	SW1905	B-17
C205	B-8	C881	E-19	Q401	E-3	R408	E-4	R817	B-19	SW1906	C-17
C206	B-8	C882	E-19	Q402	E-5	R409	E-6	R821	C-21	T131	B-5
C212	B-10	C883	E-19	Q621	D-26	R411	E-5	R822	C-21	T151	C-3
C214	B-9	C891	C-19	Q622	D-26	R421	E-2	R823	C-21	T161	B-3
C215	C-12	C892	C-19	Q623	D-26	R422	E-3	R824	C-21	T401	E-4
C216	C-12	C894	D-21	Q701	B-15	R423	D-2	R826	C-22	T402	D-8
C217	A-10	C896	D-21	Q703	C-15	R426	D-3	R827	C-22	V1	C-16
C251	E-13	D101	B-24	Q705	A-15	R428	E-2	R828	C-22	VA601	A-26
C252	C-12	D102	B-24	Q813	B-21	R482	E-2	R831	A-19	VR141	C-3
C253	C-12	D351	D-1	Q831	A-19	R483	D-11	R832	A-19	VR501	D-5
C324	D-1	D361	B-13	Q881	E-19	R484	E-11	R833	A-18	VR701	B-15
C351	D-1	D409	D-6	Q882	E-19	R486	E-12	R834	C-19	VR702	D-15
C352	D-1	D421	E-3	R001	A-6	R488	D-11	R837	C-18	VR703	C-15
C371	D-2	D422	E-3	R002	A-6	R489	D-12	R841	E-21	VR704	B-14
C401	C-28	D428	E-2	R004	B-7	R491	D-9	R842	E-21	VR705	C-14
C402	D-1	D429	E-2	R101	B-24	R492	D-10	R843	E-21	W601	A-25
C403	D-1	D482	E-2	R102	B-23	R494	D-9	R844	E-21	X141	B-1
C406	E-4	D483	D-12	R104	B-23	R496	D-10	R845	C-9	X153	A-4
C407	E-4	D484	E-11	R112	B-6	R497	B-16	R846	C-9	X161	C-5
C408	E-4	D486	D-11	R133	B-5	R498	B-16	R848	C-9	X251	C-10
C411	E-6	D487	E-10	R135	A-6	R501	D-4	R849	C-10	X401	D-2
C413	E-6	D501	D-4	R136	B-5	R502	D-4	R850	C-9	X801	A-20
C414	E-6	D602	A-27	R142	C-3	R503	D-5	R851	C-10		
C417	E-6	D603	B-27	R151	C-3	R504	D-5	R852	C-10		
C421	D-2	D604	A-27	R152	C-2	R506	D-5	R853	E-21		
C483	C-28	D605	B-27	R153	C-1	R507	E-5	R854	E-21		
C484	E-2	D621	C-26	R155	B-2	R508	D-6	R855	A-10		
C487	D-13	D622	D-26	R156	B-1	R509	D-5	R856	C-13		
C489	E-11	D623	D-27	R157	B-1	R511	D-6	R857	C-13		
C493	E-9	D801	B-18	R158	B-2	R512	D-6	R858	C-13		
C496	D-12	D802	B-19	R159	B-4	R513	E-7	R859	C-13		
C501	D-3	D831	A-19	R161	B-2	R601	A-26	R860	C-11		
C502	D-4	D834	C-18	R162	B-5	R602	B-26	R861	C-11		
C503	D-5	D836	C-18	R163	B-5	R604	C-26	R863	C-11		
C504	D-5	D841	C-11	R164	C-5	R605	C-26	R864	B-4		
C506	D-4	D843	C-19	R205	B-8	R606	C-26	R865	B-4		
C507	D-4	D861	B-5	R207	A-8	R607	C-26	R869	B-4		
C508	D-13	F601	A-25	R212	A-9	R608	B-26	R872	B-20		

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH CIRCUIT TRACE
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SANYO

MODEL DS13630 (CHASSIS 13630-02, 13630-03)

SCHEMATIC NOTES

For SAFETY use only equivalent replacement part, see parts list.

- * Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊥ Ground
- ⏏ Chassis ground
- ∇ Common tie point
- △ Taken from common tie point
- 3 Schematic **CIRCUITRACE**®: Voltage source tie point.
- A— Cabling: Heavy lines reduce use of multiple lines.

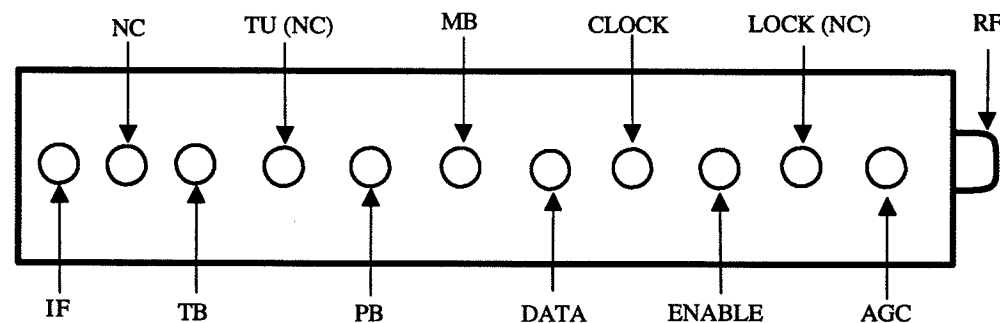
Waveforms and voltages are taken from ground, unless noted otherwise.
 Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
 Supply voltages maintained as seen at input.
 Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern, applied to antenna terminal.
 Controls adjusted for normal operation.
 Capacitors are 50 volts or less, 5% or greater unless noted. Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.
 Resistors are 1/2W or less, 5% or greater unless noted. Value in () used in some versions.
 Measurements with switching as shown, unless noted.
 Rated voltage shown on zener diodes.

TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
AGC	3.9V	4.7V	4.2V
LOCK (NC)	1.1V	4.6V	4.9V
ENABLE	.1V	.1V	.1V
CLOCK	0V	0V	0V
DATA	4.9V	4.9V	0V
MB	9.0V	9.0V	9.0V
PB	5.1V	5.1V	5.1V
TU (NC)	0V	0V	0V
TB	32.6V	34.1V	34.1V
NC	0V	0V	0V
IF	0V	0V	0V

NOTE: VHF Low Band voltages taken on channel 2.
 VHF High Band voltages taken on channel 7.
 UHF Band voltages taken on channel 14.

TUNER TERMINAL GUIDE



SERVICE INFORMATION

VERTICAL CENTERING ADJUSTMENT

Tune in a picture. If the picture is low, replace R513 with a 1000 ohms 1/2W resistor. If the picture is high, install R512 (2200 ohms 1/2W).

POWER FAILURE DETECTOR

This receiver uses a power failure detector at pin 42 of IC801, which checks for an abnormal failure of power supply circuits. If an unexpected failure is caused by any one of three conditions, the receiver will shut itself off in about 1.5 seconds to prevent damage.

The three conditions are:

1. Failure within the power supply.
2. A short circuit on the load side of the power supply.
3. Stoppage of horizontal oscillation caused by shutdown circuits.

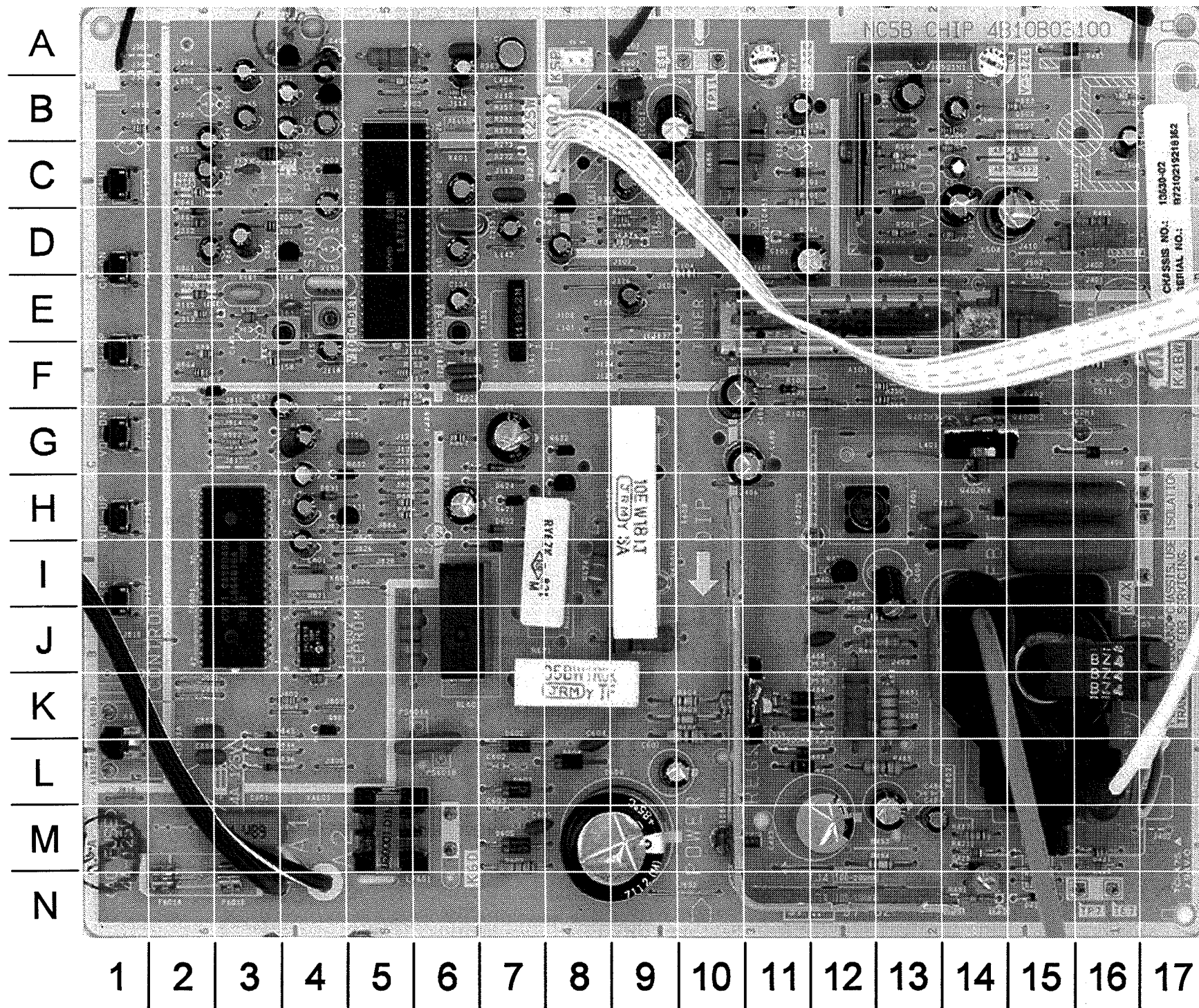
If power failure occurs three times within 15 minutes the power will shut itself off. To reset remove power for 10 seconds or more.

TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.
Oscilloscope	SC3100
Generators	
RGB	CM2125
Multiburst Signal	VG91
Color Bar	VG91
TV Stereo	VG91
Digital VOM	SC3100
Frequency Meter	SC3100
Hi-Voltage Probe	HP200
Accessory Probes	TP212
Isolation Transformer	PR570
Capacitance Analyzer	LC102
CRT Analyzer	CR7000
AC Leakage Tester	PR570
Inductance Analyzer	LC102
Flyback Yoke Tester	TVA92
Field Strength Meter	SL753
Transistor Tester	TF46
Horizontal Analyzer	HA-2500
Video Analyzer	VG91, TVA92

MAIN BOARD - TOP VIEW

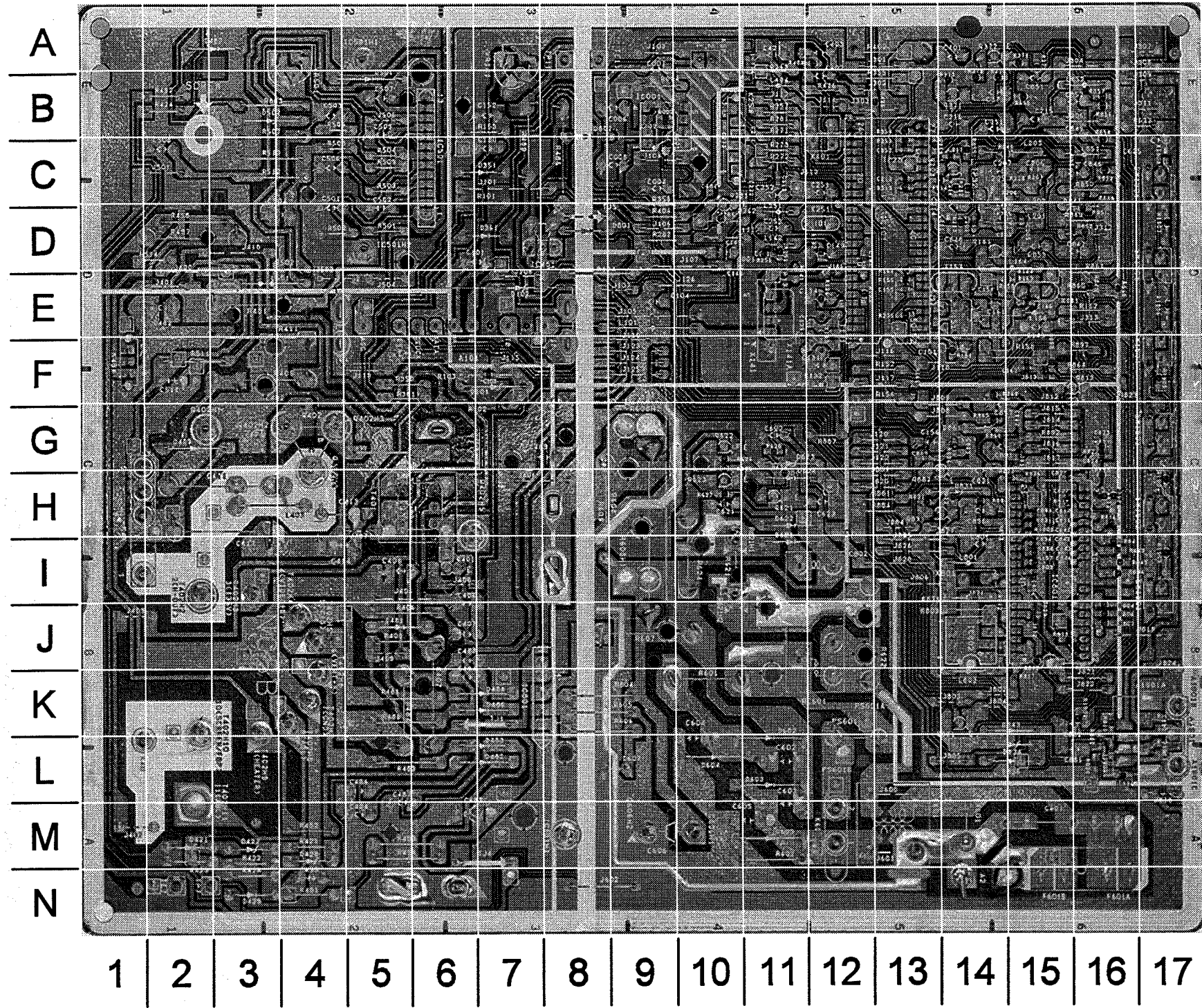



A HOWARD W. SAMS GridTrace™ PHOTO

MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

A101	E-12	C881	L-2	Q621	H-7	R624	I-8
A1901	L-1	C882	K-2	Q622	G-8	R803	J-4
C001	D-8	C891	G-4	Q623	H-8	R850	C-2
C004	C-9	C896	H-4	Q813	F-2	R860	E-2
C006	B-9	D101	F-11	Q831	H-5	R861	E-2
C007	B-9	D102	E-11	Q881	K-4	R863	D-2
C008	C-9	D351	C-11	Q882	H-5	R864	F-2
C101	D-12	D361	D-11	R004	B-9	R881	H-5
C104	E-9	D409	G-16	R101	C-11	R883	B-15
C131	F-6	D421	M-16	R102	F-11	R884	H-5
C132	F-6	D422	M-17	R104	E-10	R887	G-6
C134	E-6	D428	M-14	R112	E-2	R892	G-3
C143	D-6	D429	N-15	R152	F-5	R897	F-2
C151	F-4	D482	L-11	R153	B-11	RF601	J-6
C152	B-11	D483	L-11	R156	F-5	SW1901	I-1
C156	G-5	D484	K-11	R158	F-3	SW1902	H-1
C161	E-4	D486	K-11	R282	D-9	SW1903	G-1
C206	C-3	D487	A-15	R350	F-13	SW1904	F-1
C214	C-4	D501	B-13	R355	B-5	SW1905	D-1
C215	B-3	D602	L-7	R358	C-9	SW1906	C-1
C216	B-4	D603	L-7	R361	F-13	T131	E-6
C251	C-6	D604	L-8	R363	A-7	T151	E-4
C252	C-7	D605	M-7	R401	E-15	T161	E-4
C253	D-7	D621	I-7	R402	A-5	T401	H-12
C351	B-4	D622	H-7	R404	D-9	T402	J-15
C371	B-4	D623	G-7	R406	J-13	TE7	N-16
C401	A-4	D801	D-10	R407	K-12	TP7	N-16
C402	A-6	D802	B-10	R408	J-13	TP50	N-14
C403	A-6	D831	H-4	R409	F-15	TP51	N-14
C406	J-12	D834	L-3	R411	E-15	VR141	A-11
C407	J-12	D836	L-3	R421	M-14	VR501	A-14
C408	I-13	D841	D-2	R422	M-15	X141	E-7
C411	H-15	D843	K-3	R423	M-16	X153	E-4
C413	H-14	D861	G-4	R426	B-6	X161	E-3
C414	I-14	F601	N-2	R428	N-15	X251	D-6
C417	I-15	IC001	B-9	R482	M-14	X401	C-6
C421	A-7	IC101	E-6	R483	L-13	X801	I-4
C483	M-12	IC481	D-11	R484	K-13		
C484	M-13	IC501	C-12	R486	C-10		
C487	M-13	IC601	K-11	R488	K-13		
C489	G-11	IC801	J-3	R489	B-11		
C493	N-14	IC802	J-4	R491	N-14		
C496	F-10	J802	K-4	R492	B-16		
C501	C-14	K2SW	B-8	R494	M-13		
C502	C-13	K4BW	F-17	R497	D-16		
C503	B-14	K4U	L-17	R498	D-16		
C504	D-15	K4X	I-17	R501	D-13		
C506	C-14	K6D	M-6	R502	D-14		
C507	B-13	KSP	A-8	R503	C-13		
C508	B-16	L164	E-3	R504	C-13		
C509	B-13	L166	E-3	R506	B-14		
C601	M-3	L201	D-3	R507	B-15		
C604	L-8	L203	C-3	R508	C-14		
C605	M-7	L402	F-15	R509	C-13		
C606	M-9	L403	H-15	R511	F-16		
C607	L-9	L801	I-4	R513	C-15		
C622	G-7	L803	K-4	R601	K-8		
C623	H-6	LF601	M-5	R602	M-7		
C801	I-4	PS601	L-6	R604	K-10		
C831	H-4	Q161	D-4	R605	K-10		
C846	C-2	Q203	C-4	R606	K-10		
C847	D-2	Q281	C-8	R607	J-9		
C849	B-2	Q371	B-4	R608	H-9		
C851	A-3	Q372	A-4	R621	J-5		
C853	D-3	Q401	I-12	R622	I-7		
C857	F-4	O402	G-14	R623	B-1		

MAIN BOARD - BOTTOM VIEW



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C002	B-9	R627	H-10
C103	F-7	R628	G-11
C133	E-12	R629	H-11
C142	D-12	R804	J-16
C153	E-13	R806	J-16
C154	E-14	R807	J-16
C155	E-13	R811	K-16
C162	F-15	R812	J-15
C166	E-15	R813	J-15
C202	C-14	R814	H-16
C203	C-14	R816	H-15
C205	C-15	R817	L-15
C212	C-13	R821	H-15
C217	C-14	R822	G-16
C324	A-11	R823	H-16
C352	C-13	R824	H-16
C512	C-11	R826	H-15
C803	I-15	R827	G-16
C804	I-15	R828	H-16
C806	J-14	R831	H-15
C821	H-15	R832	H-12
C822	H-15	R833	H-13
C834	I-15	R834	I-15
C883	G-13	R837	L-16
C892	G-15	R841	I-16
C894	H-15	R842	I-16
R001	C-9	R843	I-16
R002	B-9	R844	I-16
R133	E-12	R845	E-16
R135	E-12	R846	C-15
R136	E-12	R848	C-15
R142	D-12	R849	E-16
R151	F-14	R851	D-16
R155	E-13	R852	D-16
R157	I-15	R853	C-16
R159	E-14	R854	C-16
R161	F-13	R855	C-14
R162	E-13	R856	B-16
R163	E-15	R857	B-16
R164	E-15	R858	B-15
R205	C-14	R859	C-13
R207	C-15	R865	G-14
R212	C-14	R869	F-14
R213	D-14	R872	J-14
R214	C-14	R882	L-16
R235	E-13	R886	G-14
R251	D-11	R893	H-14
R252	D-11	R894	H-14
R284	D-10	R898	F-15
R313	C-13	R1901	H-15
R314	C-14	R1902	K-16
R351	C-16	R1903	I-17
R353	C-13	R1904	H-17
R354	B-13	R1905	F-17
R371	A-15	R1906	E-17
R372	A-15	R1907	D-17
R373	B-14		
R374	B-14		
R375	B-14		
R403	A-12		
R496	B-13		
R625	G-10		
R626	G-10		

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MODEL DS13630 (CHASSIS 13630-02, 13630-03)